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(71) Applicant(s)

Vosper Thornycroft (UK) Limited

(Incorporated in the United Kingdom)

Victoria Road, Woolston, SOUTHAMPTON,  
Hampshire, SO9 5GR, United Kingdom

(72) Inventor(s)

Jonathan Olof Lippold  
Anthony Michael Walsh

(74) Agent and/or Address for Service

Marks & Clerk  
57-60 Lincoln's Inn Fields, LONDON, WC2A 3LS,  
United Kingdom

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(56) Documents Cited

GB 2215104 A GB 2146821 A US 4985699 A

US 4934079 A US 4912457 A

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(54) Electronic message presenting system

(57) The system includes an apparatus 1 for outputting a message comprising a memory 33 for storing the message in electronic form and a sensor 19 for detecting the presence of a person. Controller means 29 causes the message to be output in response to actuation of the sensor. A further apparatus (3, Fig 3, not shown) is provided for temporarily storing the message in electronic form to be downloaded into the main apparatus. The memory is capable of storing the signal in analogue form for enhancing reproduction quality.

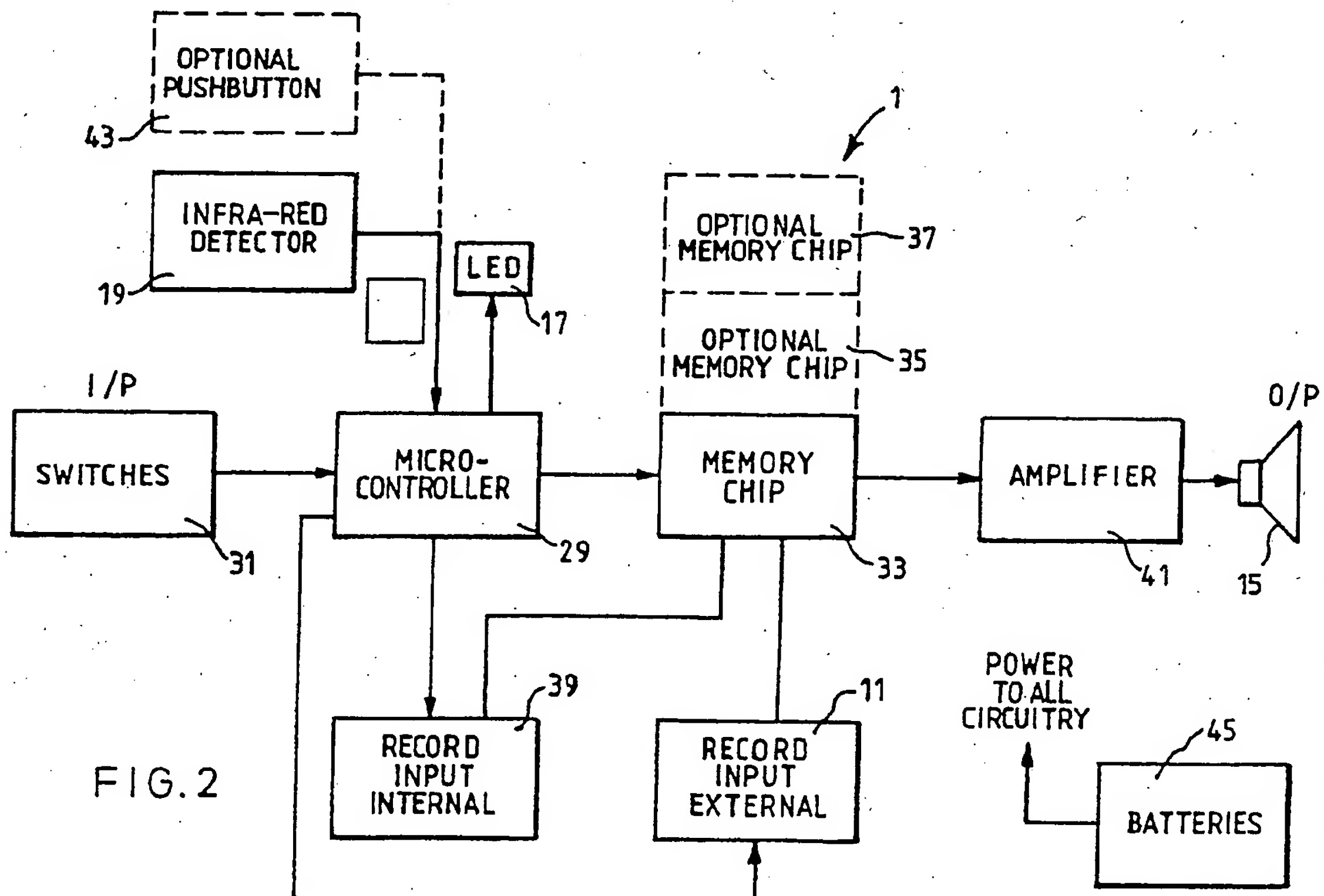
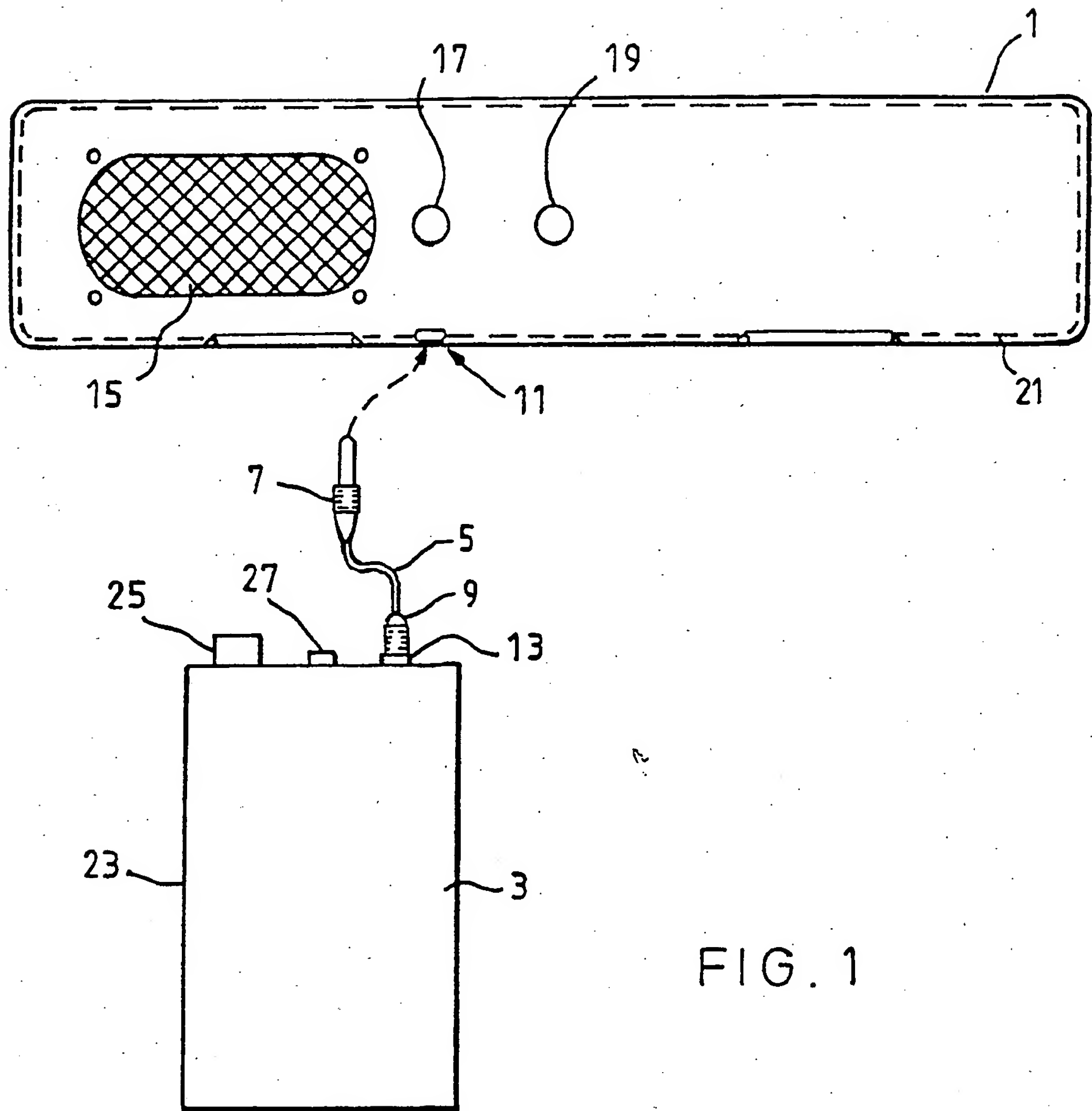


FIG. 2

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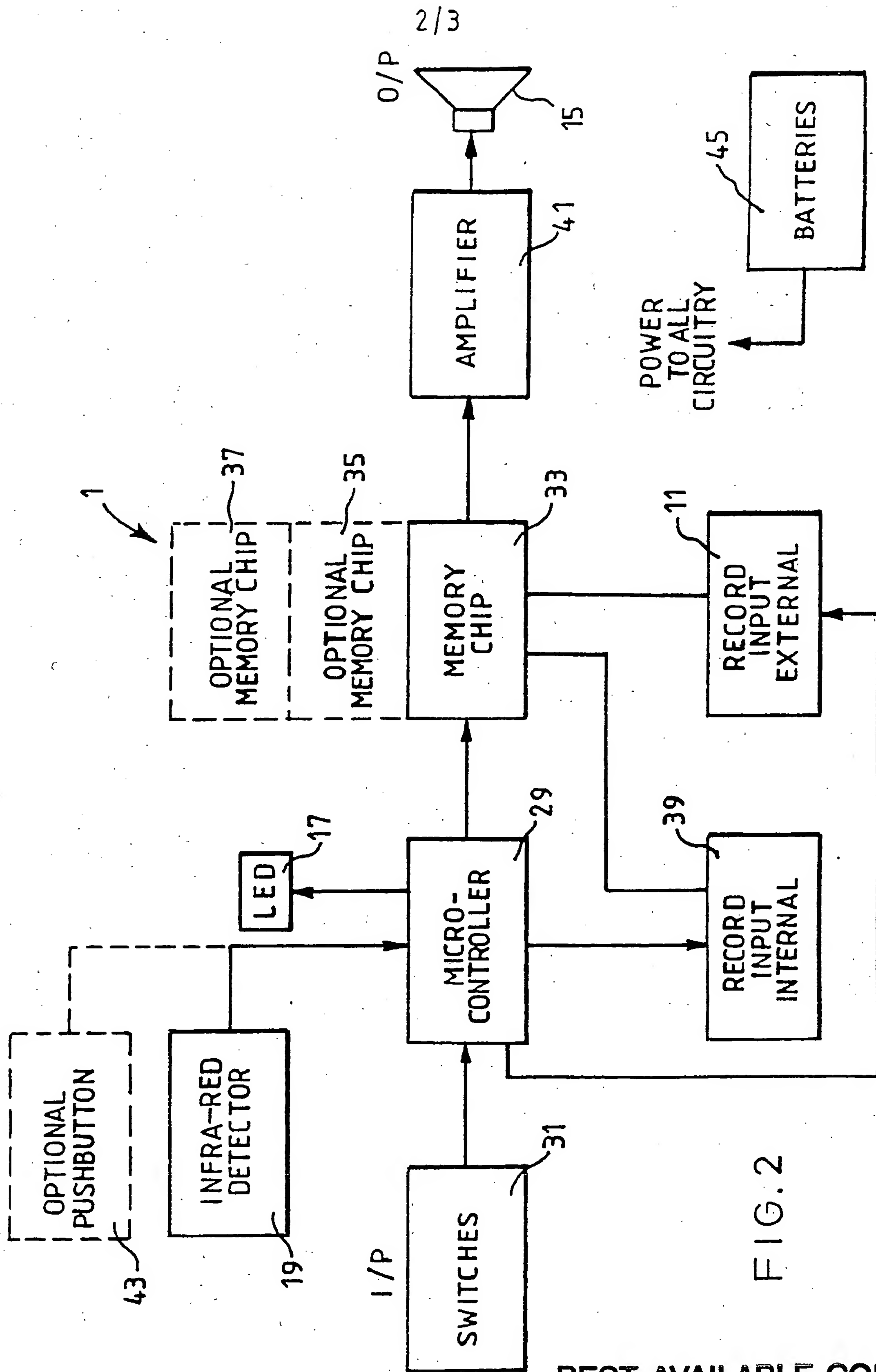


FIG. 2

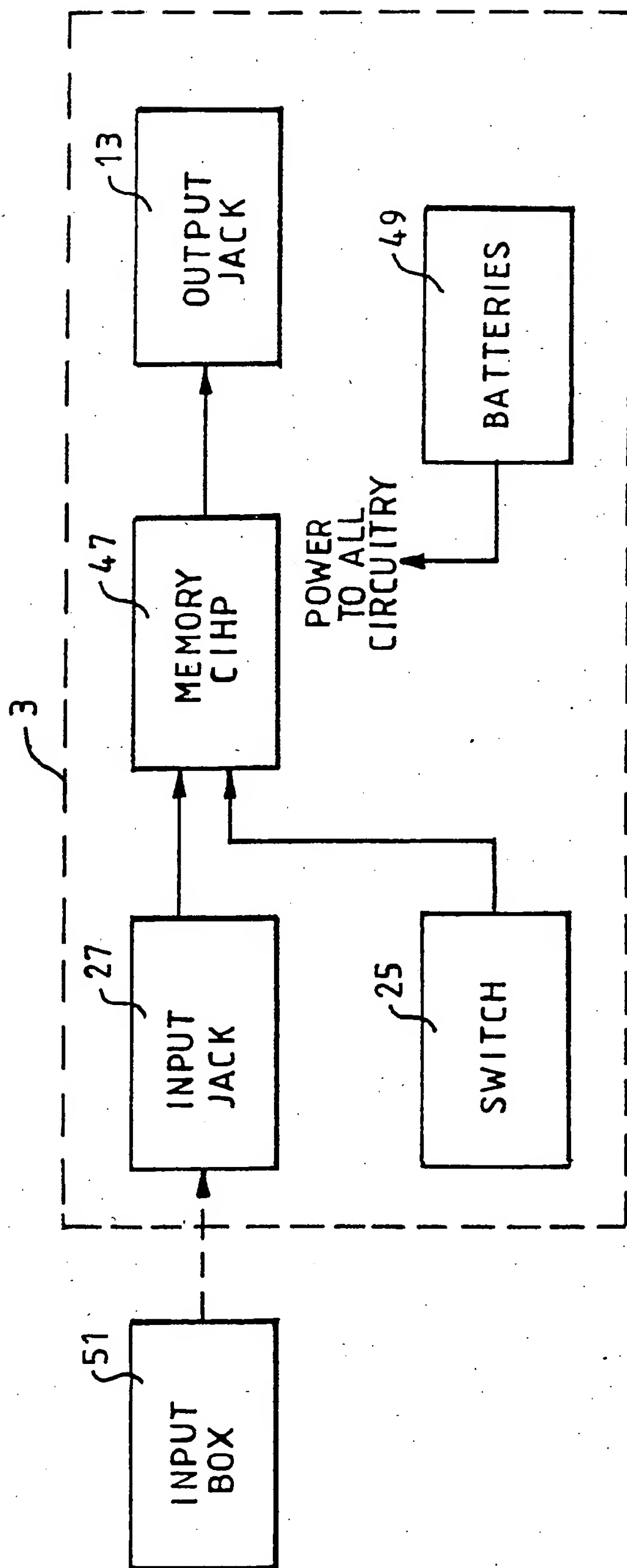


FIG. 3

ELECTRONIC APPARATUS AND SYSTEM

The present invention relates to an apparatus of the kind capable of presenting a pre-recorded message on detection of the presence of a person.

One known apparatus of this type comprises an infra-red sensitive detector for detecting the presence of a person, whereupon a pre-recorded message is emitted in audible form. The message is recorded electronically in digital form in a memory of the device. As a result, the quality of voice reproduction is relatively poor.

Moreover, it is inconvenient to pre-record the message. The device is intended to be located in a public place. Therefore, either the whole apparatus would have to be moved to a suitable location for the recording to be made, or the recording would have to be performed at the intended location of the device, or else the memory would have to be removed. All of these possibilities are not only inconvenient but necessitate taking the device out of commission for a time.

A new form of such apparatus has now been devised which in its various embodiments, can overcome either or both the aforementioned drawbacks.

A first aspect of the present invention provides a system for presenting a message, the system comprising a first apparatus comprising means for storing the message in electronic form, a sensor for detecting the presence of a person and a controller for causing the message to be presented in response to actuation of the sensor, the system further comprising a second apparatus for receiving and storing the message and subsequently

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transferring it to the message storing means of the first apparatus.

The message stored may for example be a visual message, in which case it must be stored as a video signal and presented on a suitable screen. However, in a preferred embodiment, the message is in audible form to be output via a loudspeaker. Of course, the message may have both audio and video components.

In the first apparatus, the means for storing the message in electronic form must have sufficient capacity for the intended application. Thus, it could comprise a magnetic tape, especially if the message is in video form. However, especially when the message is to be output only in audio form, the message storing means is preferably a semiconductor memory, for example an E<sup>2</sup>PROM. It is especially preferred for such a semiconductor memory to be of a kind which stores the signal in analogue rather digital form.

By storing an audio signal in analogue form, the quality of reproduction is greatly enhanced.

Therefore, a second aspect of the present invention provides an apparatus for emitting an audible signal, the apparatus comprising a memory for storing the signal in electronic form, a sensor for detecting the presence of a person and means for causing the audible signal to be emitted in response to actuation of the sensor, wherein the memory is capable of storing the audible signal in analogue form.

Preferably, the second apparatus of the system according to the first aspect of the invention comprises a further message storage means in any form indicated above in respect of the message storing means of the first

apparatus, most preferably a semiconductor memory, especially one capable of storing the signal in analogue form.

In a preferred embodiment, the sensor is an infra-red proximity detector. However, any suitable transducer which can detect the presence of a person in the vicinity, eg. a transducer capable of detecting variations in local air pressure, could be used instead. The sensor may even be a simple push button to be pressed manually by a person wishing to hear the message. Such a push button may even be provided when another sensor, such as an infra-red detector, is used, for example as a back-up in the event of failure of the former.

With a system according to the first aspect of the present invention, the first apparatus is preferably also provided with an auxiliary input for directly recording a message into the memory means of the first apparatus via a microphone. An apparatus according to the second aspect of the invention may be provided with such a microphone input and/or provision for input via a down-loading unit in the form of the second apparatus according to the first aspect of the invention.

The loading unit (second apparatus) enables the desired message to be prepared professionally at a suitable location, stored temporarily in the second apparatus, and subsequently loaded into the first apparatus. However, the provision of a microphone input allows an operator at the site where the first apparatus is to be located to put in new messages ad hoc.

Since there is a risk that a person operating the loading unit could inadvertently delete a pre-recorded message by accidentally pressing a control to initiate a

recording to be made in the second apparatus, preferably, such a control is provided in a separate interface unit, only to be made available to persons preparing the original recording.

It is also preferred for the first apparatus of the system according to the present invention or the apparatus of the second aspect, to be provided with delay means for preventing repeat of the message for a predetermined time after it is broadcast.

The system and apparatus according to the present invention may be used in a wide variety of applications, for example providing advertising, safety or public information announcement in public places, supermarkets and department stores etc.

The present invention will now be explained in more detail by the following description of a preferred embodiment in which: -

Figure 1 shows a system according to the present invention;

Figure 2 shows a block circuit diagram of a message broadcasting device forming part of the system shown in Figure 1; and

Figure 3 shows a block circuit diagram of a message loading device forming part of the system shown in Figure 1.

As shown in Figure 1, a system according to the present invention comprises a message broadcasting device 1 and a message loading device 3. A connecting lead 5 is provided for interconnecting the broadcasting and message loading devices and for this purpose is provided



with respective jack plugs 7, 9 at either end. The plugs are adapted to fit into an input socket 11 of the broadcasting device and an output socket 13 of the loading device, respectively.

The broadcasting device is provided with a loudspeaker 15, an LED indicator 17 and an infra-red proximity detector 19, all mounted in a case 21.

The loading device is also provided with a case 23 on which is mounted a loading switch 25 and a recording input socket 27.

The electronic components of the broadcasting device are shown in more detail in Figure 2. At the heart of the device is a microprocessor controller 29 for controlling overall operation of the device. The controller is responsive to input switches 31 for setting operational modes of the device.

The controller determines read and write addresses of a semiconductor memory chip 33 which is of a kind capable of storing audio signals in direct analogue electrical form. The controller also determines the sampling rate for input audio signals, for storage in individual memory cells. Moreover, the controller controls whether the memory chip functions in input or output mode.

Optionally, further like memory chips 35, 37 may be provided to increase the capacity of the device regarding the length of message which can be stored.

The message stored in the memory chip may either be received from the input socket 11 intended for connection to the loading device or it may receive input direct from a microphone which may be plugged into a separate input socket 39 provided for that purpose. In

this particular embodiment, the separate input socket 39 is located on the rear of the device and so is not shown in Figure 1.

An amplifier 41 is provided for amplifying the audio signals to a level sufficient to drive the loudspeaker 15.

When the broadcasting device is positioned in a public place and the infra-red proximity detector detects the presence of a person, its output is received by the controller which causes the message stored in the memory chip to be output via the amplifier and broadcast through the loudspeaker.

Additionally or alternatively, a pushbutton switch 43 may be provided for manual activation by a person to initiate broadcast of the message. During broadcasts, the LED 17 flashes. The micorprocessor is also programmed with a time delay function so that during a predetermined period after the message broadcast finishes, it will not respond to an output of the infra-red detector. This is to prevent incessant repetition of the message in the event that the person is slow to move away from the unit after hearing the message.

The device is powered by a battery unit 45 but of course, it could equally be powered by a conventional mains power supply.

Figure 3 shows a block diagram of the electronic components of the loading device 3. This also contains a memory chip 47 which like the memory chip(s) in the broadcasting device, is a semiconductor memory capable of storing audio signals in analogue form. It receives and stores signals via the input socket 27 and upon

actuation of the loading switch 25, outputs the stored signals via the output socket 13.

A battery power supply 49 is provided for the unit but again, a mains power pack could be used in the alternative.

The message to be recorded temporarily in the loading unit for subsequent download into the broadcast device may be prepared in a professional recording studio. The message is transferred to the loading device via a separate interface unit 51 which is provided with a control to initiate storage of the information in the memory chip 47.

The interface unit simply plugs into the input socket 27. Since the control for initiating storage is not on the loading unit itself, unskilled personnel cannot erase an existing stored message by inadvertently operating this control when downloading into the broadcast device.

In the light of this disclosure, modifications of the described embodiment, as well as other embodiments, all within the scope of the appended claims will now become apparent to persons skilled in the art.

CLAIMS

1. A system for presenting a message, the system comprising a first apparatus comprising means for storing the message in electronic form, a sensor for detecting the presence of a person and a controller for causing the message to be presented in response to actuation of the sensor, the system further comprising a second apparatus for receiving and storing the message and subsequently transferring it to the message storing means of the first apparatus.
2. A system according to claim 1, wherein the message storage means of the first apparatus is a semiconductor memory.
3. A system according to claim 2, wherein the semiconductor memory is adapted to store the message in analogue electronic form.
4. A system according to any preceding claim, wherein the second apparatus comprises a further message storage means in the form of a semiconductor memory.
5. A system according to claim 4, wherein the semiconductor memory of the further message storing means is adapted to store the message in analogue electronic form.
6. A system according to any preceding claim, wherein the second apparatus comprises input means for loading the message into the further message storing means and output means for downloading the message from the further message storing means into the message storage means of the first apparatus.
7. A system according to any preceding claim, further

comprising an interface unit for connection between the second apparatus and external recording equipment, the interface comprising a control.

8. A system according to any preceding claim, wherein the controller is provided with delay means for preventing repetition of the message for a predetermined period after it finishes.

9. An apparatus for emitting an audible signal, the apparatus comprising a memory for storing the signal in electronic form, a sensor for detecting the presence of a person and means for causing the audible signal to be emitted in response to actuation of the sensor, wherein the memory is capable of storing the audible signal in analogue form.

10. A system for presenting a message, the system being substantially as hereinbefore described with reference to any of the accompanying drawings.

11. An apparatus for emitting an audible signal, the apparatus being substantially as hereinbefore described with reference to the accompanying drawings.

Patents Act 1977  
Examiner's report to the Comptroller under  
Section 17 (The Search Report)

- 10 -

Application number

GB 9218523.0

Relevant Technical fields

(i) UK CI (Edition K ) G4N (NAA, NDAX)

(ii) Int CI (Edition 5 ) G09F 25/00, 27/00

Search Examiner

D L SUMMERHAYES

Databases (see over)

(i) UK Patent Office

(ii)

Date of Search

17.11.92

Documents considered relevant following a search in respect of claims 1-8, 10

| Category<br>(see over) | Identity of document and relevant passages                                                              | Relevant to<br>claim(s) |
|------------------------|---------------------------------------------------------------------------------------------------------|-------------------------|
| X                      | GB 2215104 A (VOICEBOX) see whole document                                                              | 1 at<br>least           |
| X                      | GB 2146821 A (THORN) see whole document                                                                 | 1 at<br>least           |
| X                      | US 4985699 (EVANS) see whole document<br>particularly column 3<br>lines 11-17                           | 1 at<br>least           |
| X                      | US 4934079 (HOSHI) see whole document,<br>particular column 2,<br>lines 16-24; column 4,<br>lines 32-36 | 1 at<br>least           |
| X                      | US 4912457 (LADD) see whole document,<br>particularly column 6<br>lines 4-17                            | 1 at<br>least           |

| Category | Identity of document and relevant passages<br>- II -          | Relevant<br>to claim(s) |
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